



August 7, 2014

VIA ELECTRONIC FILING

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

Re: Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268; Office of Engineering and Technology Releases and Seeks Comment on Updated OET-69 Software, ET Docket No. 13-26

Dear Ms. Dortch:

The Expanding Opportunities for Broadcasters Coalition (the “Coalition”) hereby submits these Informal Comments pursuant to Section 1.1206 of the Commission’s rules. The purpose of these Informal Comments is to identify a potential issue with the Commission’s use of the TVStudy program that is producing inconsistent results that could materially affect both the incentive auction and the Commission’s repacking efforts, and to seek clarification regarding the assumptions producing these results.

On May 20, 2014, the FCC released a revised version of its constraint files for the incentive auction and subsequent repacking, which included a domain file and an interference file using actual channels instead of the proxy channels that the Commission used in its July 2013 constraint files.<sup>1</sup> The revised paired interference file<sup>2</sup> includes numerous instances where a given station’s blocking characteristics change by an implausibly large amount from

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<sup>1</sup> See FCC, Constraint Files for Repacking, [http://data.fcc.gov/download/incentive-auctions/Constraint\\_Files/](http://data.fcc.gov/download/incentive-auctions/Constraint_Files/) (last visited Aug. 4, 2014).

<sup>2</sup> Interference\_Paired File (May 20, 2014), [http://data.fcc.gov/download/incentive-auctions/Constraint\\_Files/Interference\\_Paired\\_2014May20.csv.gz](http://data.fcc.gov/download/incentive-auctions/Constraint_Files/Interference_Paired_2014May20.csv.gz).



one channel to the next. The National Association of Broadcasters documented instances of this phenomenon in its comments dated July 2, 2014.<sup>3</sup> Upon further review, we believe that these results at least partially stem from the use of minimum effective radiated power (ERP) levels in TVStudy's replication of station contours.

To illustrate this issue, Exhibit 1, below, contains data from the May 20 interference file for KUEW(TV) (Facility ID No. 82585), St. George, UT. The constraint data indicates that KUEW interferes with 11 stations if assigned to channel 18, but only one station if assigned to any other channel (with just channel 17 and 19 shown here for brevity).

**Exhibit 1: Extract from Paired Interference file for KUEW**

CO	17	17	82585	35822										
CO	18	18	82585	10179	10195	11683	35042	35822	35870	41237	63768	67089	69677	74100
CO	19	19	82585	35822										

Attachment A includes 12 additional examples of stations that are predicted to interfere with a substantially larger number of stations on a single channel. In each of these examples, the list of interfered stations is notably longer for the station's current channel assignment when compared to its adjacent channel assignments. For example, as shown in Exhibit 1, KUEW's current channel assignment, channel 18, is the only channel where KUEW is predicted to interfere with more than one other station.

These results suggest that the anomalous results are caused by a difference in the way the Commission is using TVStudy to calculate a station's contour for its existing channel compared to other channels. In fact, the interference files are based on a station's actual contour for its existing channel, but utilize a replicated contour for every other channel. Unlike the station's actual contour, however, the replication routine generated by TVStudy is constrained by the minimum power levels specified in Exhibit 2, below.

<sup>3</sup> See Comments of the National Association of Broadcasters, ET Docket No. 13-26, GN Docket No. 12-268 (July 2, 2014), available at <http://apps.fcc.gov/ecfs/document/view?id=7521365848>.



**Exhibit 2: Default Replication Parameters in TVStudy**

Replication  
Replication method = Equal area  
Digital full-service minimum ERP, VHF low = 1  
Digital full-service minimum ERP, VHF high = 3.2  
Digital full-service minimum ERP, UHF = 50  
Digital full-service maximum ERP, VHF low Zone I = 10  
Digital full-service maximum ERP, VHF low Zone II/III = 45  
Digital full-service maximum ERP, VHF high Zone I = 30  
Digital full-service maximum ERP, VHF high Zone II/III = 160  
Digital full-service maximum ERP, UHF = 1000  
Digital Class A/LPTV minimum ERP, VHF = 0.07  
Digital Class A/LPTV minimum ERP, UHF = 0.75  
Digital Class A/LPTV maximum ERP, VHF = 3  
Digital Class A/LPTV maximum ERP, UHF = 15

For a digital full service UHF station, the replication routine is subject to a minimum ERP of 50 kW. For KUEW, this means that the contour that TVStudy uses at Channel 18 assumes an ERP of only 1.62 kW (its licensed power level), but for all other channels, TVStudy dramatically increases KUEW's power level to 50 kW. Perhaps counterintuitively, this artificial increase in power actually reduces the number of stations with which KUEW is mutually exclusive because it makes the station seem more resistant to the effects of incoming interference than it really is.

These distortions could have a major effect on both the incentive auction and the repacking. Under the descending clock format that the Commission has adopted for the reverse auction, the FCC will utilize its constraint files to conduct a feasibility check after each round of bidding. By reducing the amount of predicted interference that stations situated similarly to KUEW will create, the use of a minimum ERP will artificially decrease their value in the incentive auction and reduce the likelihood that they will need to be cleared at all. In the repacking, meanwhile, the use of a minimum ERP in the replication routine makes it more likely that stations operating below 50 kW will be forced to relocate to a different channel (where TVStudy predicts that they will have less interference). This will both unnecessarily inconvenience broadcasters and result in the needless expenditure of TV Broadcaster Relocation funds to relocate stations that might be able to stay on



their existing channel. It also will create uncertainty as to whether these stations will need to (and whether they even will have the authority to) significantly increase their operating power after the post-auction transition to preserve their existing coverage areas.

It is unclear to the Coalition members why the Commission has introduced minimum ERP levels for the calculation of pairwise interference constraints. To the extent that the FCC intends to preserve the use of minimum ERP levels when generating future constraint files, the Coalition hereby requests that the FCC clarify the purpose of such minimum ERP levels. In the absence of a compelling reason to retain the use of minimum ERP levels, the Coalition urges the Commission to eliminate them to permit TVStudy's replication process to proceed without the artificial distortions that these minimum ERP levels introduce.

Respectfully Yours,

/s/ Preston Padden /s/

Preston Padden  
Executive Director  
Expanding Opportunities for Broadcasters Coalition

## Attachment A

The twelve stations below exhibit particularly large changes in the count of interfered stations depending on whether the station is assigned to its current channel, or to the channel immediately above or immediately below its current channel. Data is taken from the file "Interference\_Paired File 2014May20.csv" and the associated TV Study parameter files.

Call Sign	Facility ID	City of License	ERP	Current Channel	Count of Interfered Stations on Current Channel	Count of Interfered Stations on channel below	Count of Interfered Stations on channel above
WBIN-TV	14682	Derry NH	7.3 kW	35	52	43	42
WDFX-TV	32851	Ozark AL	15 kW	33	45	36	35
KHPZ-CA	35910	Round Rock TX	0.07 kW	15	40	27	27
KHPL-CA	35913	La Grange TX	0.04 kW	40	33	9	9
WYDC	62219	Corning, NY	7.6 kW	48	47	32	32
WFBT	72623	Bath NY	0.68 kW	14	54	28	26
WSKA	78908	Corning NY	25 kW	30	55	46	47
KDCK	79258	Dodge City KS	8.42 kW	21	17	8	8
KUEW	82585	St George UT	1.62 kW	18	11	1	1
KFTC	83714	Bemidji, MN	4.5 kW	26	19	7	7
KRMU	84224	Durango CO	12.6 kW	20	12	4	4
WWJX	166512	Jackson MS	20 kW	23	40	31	31

Figure 1 presents the data from the last three columns in visual form.

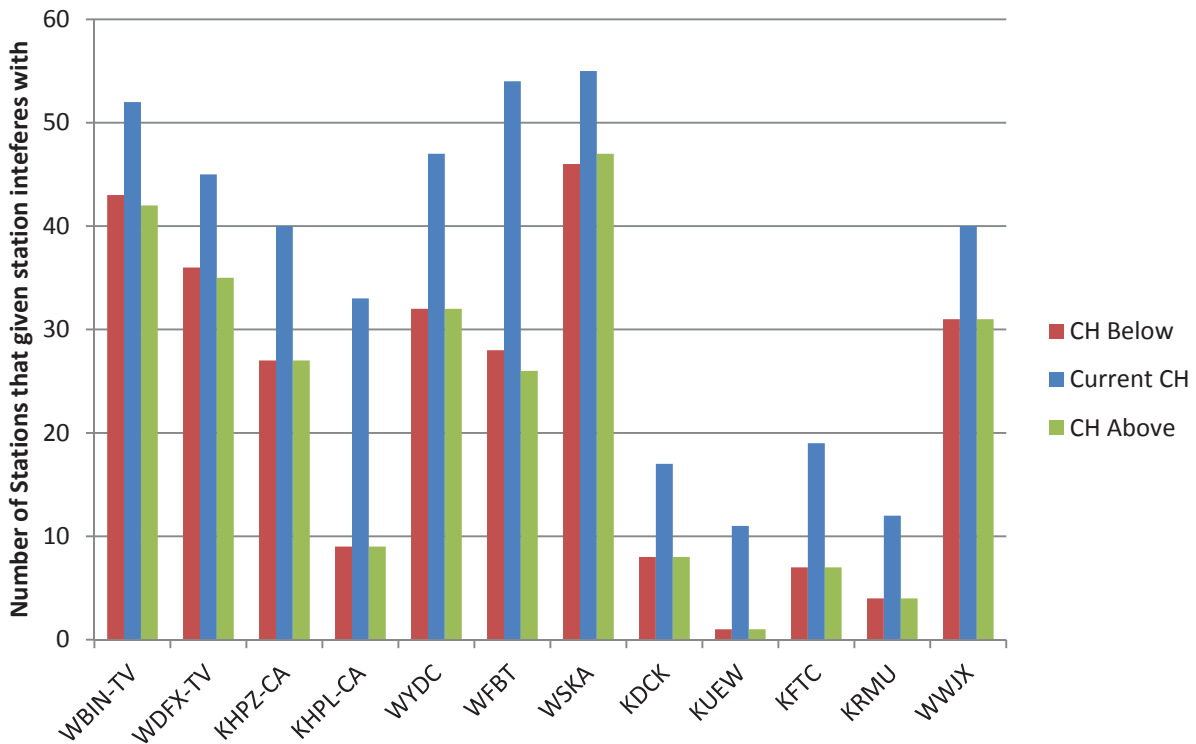
Although the twelve stations presented in the chart above reflect obvious inconsistencies in the paired interference data, this issue will affect (to varying degrees) at least 156 stations that currently operate below TVStudy's minimum ERP levels, as summarized in the table below. The effect will further extend to any stations that are part of an interfering pair with these stations, creating an exponentially greater impact on both the auction and repacking.

### Estimated Number of Stations Currently Operating Below TVStudy Minimum ERP Levels\*

Band	Full Power	Digital Class A or Low Power	Total
UHF	108	29	137
HiVHF	17	0	17
LoVHF	1	1	2
<b>Total</b>	<b>126</b>	<b>30</b>	<b>156</b>

\*Note that analog and DTS stations were excluded from these totals.

**Figure 1. Twelve Examples of Large Changes in the Calculated Number of Interfering Stations, due to Application of Minimum ERP Level**



In the figure above, for each station the center blue column represents the number of interfering stations that the paired interference files list for that station on its current channel. The red and green bars on either side represent the number of interfering stations if the given station is assigned to either the channel immediately below, or immediately above its current assignment. The large changes between the center column and the adjacent columns appear to be caused by the application of minimum ERP levels when replicating the station on any channel except its current assignment.